



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,321	06/28/2005	Yoshimaro Fujii	46884-5317	2802
55694	7590	06/05/2009		
DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER ULLAH, ELIAS	
			ART UNIT	PAPER NUMBER
			2892	
			MAIL DATE	DELIVERY MODE
			06/05/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No. 10/507,321	Applicant(s) FUJII ET AL.	
Examiner ELIAS ULLAH	Art Unit 2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 March 2009.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 56-111 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 56-111 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 June 2005 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :9/16/2008, 10/15/2008, 11/19/2008, 2/6/2009, 4/22/2009, 5/18/2009.

Art Unit: 2892

DETAILED ACTION

This office action is in response to an amendment filed on 3/6/2009.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 56-111 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the base claims 56, 72, 88 and 100 Applicants claimed "without forming a groove due to melting on a laser light incident face of the substrate", Applicants failed to describe in the specification in such a way as to reasonably convey to one skilled in the relevant art at the time the application was filed.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 56-111 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 56-111, Applicants claimed "without forming a groove due to melting on a laser light incident face of the substrate".

However, Applicant failed to particularly point out and distinctly claim the subject matter

Art Unit: 2892

which applicant regards as the invention. Furthermore, it appears that the above claimed limitations direct to a negative limitation and the negative claimed limitation that rendered the claim indefinite because it was an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. In re Schechter, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). See MPEP 2173.05(i).

5. For purpose of examination, Examiner assumes Sawada shows a laser inherently anticipated above indefinite claimed limitations without forming a groove due to melting on a laser light incident face of the substrate”.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 56, 57, 57, 59, 61, 63, 69 -73, 79, 85- 88, 90, 93, 100, 102, 105,and 109-111, are rejected under 35 U.S.C. 102(e) as being anticipated by Sawada US 2002/0115235) of record.

With regard to claims 56, 72, 88 and 100 Sawada shows a substrate dividing method (Figs. 12(A)-14(C) comprising the steps of irradiating a substrate (W, Fig. 12(A))

Art Unit: 2892

with laser light (L, Fig. 14(A)) while positioning a light-converging point within the substrate (Fig. 14(A)); and grinding the substrate (Fig. 12(D)) after the step of forming the starting point region (G, Fig. 12(B)) for cutting such that the modified region remains in the substrate (W); wherein the substrate (W) is cut when a fracture (G) generated in a thickness direction of the substrate (W) from the starting point region for cutting reaches a front face ((Fig. 12(B) G) and a rear face of the substrate (12C).

The recitation of “so as to form a modified region within the substrate without forming a groove due to melting on a laser light incident face of the substrate, and causing the modified region to form a starting point region for cutting the substrate inside the substrate by a predetermined distance from the laser light incident face of the substrate” is substantially identical to irradiating laser and substrate recited in Sawada in [0060-0066] and [0071] and claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and MPEP 2112.01.

With regard to claims 57, 73, Sawada shows wherein the substrate is a semiconductor substrate [0004].

With regard to claims 59, 90 and 102 Sawada shows wherein the modified region is a molten processed region [0015].

Art Unit: 2892

With regard to claims 61, 77, 91 and 103, Sawada shows a front face of the substrate is formed with a functional device [0010 and 0004], and wherein a rear face of the substrate is ground in the step of grinding the substrate (Fig. 12(D)).

With regard to claim 63, 79, 93 and 105 Sawada shows modified region modify region including a crack region [0016].

With regard to claims 69-71, 85-87, 97-99 and 109-111 Sawada shows the substrate (W) is cut into a plurality of chips (Fig. 13(c)) along lines along which the substrate W is cut and the lines being arranged in a lattice for the substrate (W) and the substrate (W) cut when in the fracture reaches the front face (Fig. 12 (a) and the rear face of the substrate after the step of grinding the substrate (Fig. 12(D)) and the substrate is cut when the fracture reaches the front face and the rear face of the substrate in the step of grinding (Fig. 12D).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2892

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 58, 64, 74, 80, 82, 89, 94, 96, 101 and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (US 2002/0115235 A1).

With regard to claims 58, 64, 74, 80, 82, 89, 94, 96, 101 and 106, Sawada shows a pulse width of 1 us or less [0069] but fails to disclose specifically a light-converging point within the substrate under a condition with “a peak power density of at least 1×10^8 (W/cm²) at the light- converging point”, so as to form a modified region including a crack region within the substrate.

However, Sawada discloses a general laser light to from a modified region [0060-0067]. An additional ref. is provided for supporting the facts “under a condition with a peak power density of at least 1×10^8 (W/cm²) at the light-converging point” (US Ref. US 6,376,797 in col. 3, lines 25-50 for mere facts). Accordingly, it would have been obvious to one of ordinary skill in art to use teaching Sawada in the range as claimed, because it has been held that where the general conditions of the claims are discloses in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. MPEP 2144.05.

With regard to claims 65, 81, 95 and 107 the modified region includes a refractive index change region (due to laser irradiation substrate inherently have refractive index change region) which is a region with a change refractive index.

With regard to claims 66, 82, 96 and 108 see above claim 64 discussions.

Art Unit: 2892

8. Claims 60, 62, 76, 78, 92 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada in view of Yamada (US 4,899,126) all of record.

With regard to claims 60, 62, 76, 78, 92 and 104, Sawada fails to teach the substrate is an insulating substrate and grinding the substrate to "a chemical etch".

Yamada teaches the substrate is an insulating substrate and grinding the substrate to "a chemical etch" (col. 1, lines 10-15). At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use an insulating substrate and grinding the substrate to "a chemical etch" teaching of Yamada in the method of cutting a substrate of Sawada, because using an insulating substrate and an a chemical etching for substrate are conventional method in the art as taught by Yamada in (col. 1, lines 5-20).

9. Claims 67 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada in view of Radojevic et al. (US 2003/0010275) all of record.

With regard to claims 67 and 83 Sawada also fails to disclose the substrate is made of a piezoelectric material.

Radojevic et al. teaches the substrate is made of a piezoelectric material [0077]. At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use a substrate made of piezoelectric material teaching of Radojevic et al. in the method of cutting a substrate of Sawada, because using an a substrate made of piezoelectric material able to bond with thin layer over substrate that will help to improve manufacture a packaging die as taught by Radojevic et al [0077].

With regard to claims 68 and 84, see above claim 64 discussions.

Response to Arguments

10. Applicant's arguments filed on 3/6/2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIAS ULLAH whose telephone number is (571)272-1415. The examiner can normally be reached on weekdays, between 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao Le can be reached on (571) 272-1708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2892

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elias Ullah/
Examiner, Art Unit 2892

/Trung Dang/
Primary Examiner, Art Unit 2892

5/19/09